



Exercise Sheet 10: Transaction Processing 2

Exercise 1

Given two schedules:

$r_2(z) \ r_2(y) \ w_2(y) \ r_3(y) \ r_3(z) \ r_1(x) \ w_1(x) \ w_3(y) \ w_3(z) \ r_2(x) \ r_1(y) \ w_1(y) \ w_2(x)$

$r_3(y) \ r_3(z) \ r_1(x) \ w_1(x) \ w_3(y) \ w_3(z) \ r_2(z) \ r_1(y) \ w_1(y) \ r_2(y) \ w_2(y) \ r_2(x) \ w_2(x)$

- Apply and visualize the timestamp ordering algorithm for both schedules. Can the schedule be executed?
- Apply and visualize the altruistic locking algorithm for both schedules. Can the schedule be executed?
- Apply the ostrich algorithm for both schedules. Can the schedule be executed?

Exercise 2

- What is a predicate lock?
- Why is overload control important?
- What are optimistic protocols?
- Explain the concept of isolation levels. Give example for each of them.